Application No.: 10/619,408 Docket No.: SIW-063RCE

AMENDMENTS TO THE CLAIMS

1. (Canceled)

2. (Canceled)

3. (Canceled)

4. (Currently Amended) In a fuel cell vehicle equipped with a fuel cell, an idle control system, a driving motor, a power storage device, a hydrogen supply, an air compressor and auxiliary equipment, a method of generating electrical current comprising the steps of:

identifying the occurrence of an idle state, said idle state being based on at least one of the speed of said fuel cell vehicle being lower than a predetermined value, the expected power consumption of the driving motor being lower than a predetermined value or an electrical power load of an electrical load being lower than a predetermined value;

selecting a power generation mode in response to the occurrence of the idle state; and

adjusting the power generation of the fuel cell based on the selected power generation mode using said idle control system, wherein

the selection of a power generation mode includes the ~~further~~ steps of:

selecting an idle charge mode, said idle charge mode being selected based on a determination that said power storage device does not exceed a predetermined parameter; and

adjusting the electrical current generated by the fuel cell according to an optimum power generation efficiency of the fuel cell, said optimum power generation efficiency being based on identified parameters, and wherein

the adjustment of the electrical current generated by the fuel cell to an optimum level according to said optimum power generation efficiency includes the further steps of:

determining a total electrical power generated by the fuel cell;

subtracting an electrical power consumption of the air compressor;

dividing a result of the total electrical power generated by the fuel cell minus the electrical power consumption of the air compressor by the total electrical power generated by the fuel cell and multiplying an overall result by 100% to arrive at an efficiency percentage; and

adjusting the power generated by the fuel cell based on said efficiency percentage, wherein the selection of a power generation mode comprises the further steps of:

selecting an idle stop mode, said idle stop mode being selected based on a determination that electrical power stored in said power storage device exceeds a predetermined parameter;

stopping the generation of electrical current by said fuel cell; and

using the power storage device to supply electrical power to said driving motor or said auxiliary equipment.

5. (Previously Presented) The method of claim 4, wherein the electrical power load of the electrical load includes the power requirements of said driving motor, the power requirements of said air compressor used to supply hydrogen from said hydrogen supply to said fuel cell and the power requirements of said auxiliary equipment in said fuel cell vehicle.

6. (Canceled)

7. (Canceled)

8. (Canceled)

9. (Canceled)

10. (Previously Presented) The method of claim 4, wherein said generated electrical current is stored in said power storage device.

11. (Previously Presented) The method of claim 4, comprising the further steps of:

identifying a need for increased electrical power while in said idle charge mode; and

exiting said idle charge mode to return to a normal power generation mode, said normal power generation mode supplying electrical current directly from said fuel cell to said driving motor and said auxiliary equipment.

12. (Canceled)

13. (Canceled)

14. (New) In a fuel cell vehicle equipped with a fuel cell, an idle control system, a driving motor, a power storage device, a hydrogen supply, an air compressor and auxiliary equipment, a method of generating electrical current comprising the steps of:

identifying the occurrence of an idle state, said idle state being based on at least one of the speed of said fuel cell vehicle being lower than a predetermined value, the expected power consumption of the driving motor being lower than a predetermined value or an electrical power load of an electrical load being lower than a predetermined value;

selecting a power generation mode in response to the occurrence of the idle state; and

adjusting the power generation of the fuel cell based on the selected power generation mode using said idle control system, wherein the selection of a power generation mode comprises the steps of:

selecting an idle stop mode, said idle stop mode being selected based on a determination that electrical power stored in said power storage device exceeds a predetermined parameter;

stopping the generation of electrical current by said fuel cell; and

using the power storage device to supply electrical power to said driving motor or said auxiliary equipment.